



[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 21

[Docket No. FAA-2018-0860]

Proposed Primary Category Design Standards; Vertical Aviation Technologies

(VAT) Model S-52L Rotorcraft

AGENCY: Federal Aviation Administration, DOT

ACTION: Notice of availability; request for comments

SUMMARY: This notice announces the existence of and requests comments on the proposed airworthiness design standards for acceptance of the Vertical Aviation Technologies (VAT) Model S-52L rotorcraft under the regulations for primary category aircraft.

DATES: Comments must be received on or before **[INSERT DATE 60 DAYS FROM DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Send comments to the Federal Aviation Administration, Policy and Innovation Division, Rotorcraft Standards Branch, AIR-681, Attention: Michael Hughlett, 10101 Hillwood Parkway, Ft Worth, Texas 76117. Comments may also be emailed to: Michael.Hughlett@faa.gov.

FOR FURTHER INFORMATION CONTACT: Michael Hughlett, Aviation Safety Engineer, Rotorcraft Standards Branch, Policy and Innovation Division, FAA, 10101 Hillwood Pkwy., Fort Worth, Texas 76177; telephone (817) 222-5110; email Michael.Hughlett@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites interested parties to submit comments on the proposed airworthiness standards to the address specified above. Commenters must identify the VAT Model S-52L on all submitted correspondence. The most helpful comments reference a specific portion of the airworthiness standards, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received on or before the closing date before issuing the final acceptance. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change the proposed airworthiness standards based on received comments.

Background

The primary category for aircraft was created specifically for the simple, low performance personal aircraft. Section 21.17(f) provides a means for applicants to propose airworthiness standards for their particular primary category aircraft. The FAA procedure establishing appropriate airworthiness standards includes reviewing and possibly revising the applicants' proposal, publication of the submittal in the Federal Register for public review and comment, and addressing the comments. After all necessary revisions, the standards are published as approved FAA airworthiness standards.

Proposed Airworthiness Standards for Acceptance Under the Primary Category

This document prescribes airworthiness standards for the issuance of a type certificate for the VAT Model S-52L, a primary category rotorcraft, and its engine. The airworthiness standards for this aircraft include a sub-set of regulations for the fuel

system that are at amendment levels higher than Amendment 27-0 to provide improved occupant protection.

Each person who applies under part 21 for a change to this type certificate must show compliance with these requirements.

CAR 13 effective 03/5/1952 as follows:

13.0, 13.10, 13.11, 13.12, 13.13, 13.14, 13.16(a), 13.16(b), 13.16(d), 13.17, 13.18, 13.19, 13.20, 13.21, 13.100, 13.101, 13.102, 13.103, 13.104, 13.110, 13.111, 13.112, 13.113, 13.114, 13.115, 13.150, 13.151, 13.153, 13.155, 13.156, 13.157.

CAR 13 effective 05/16/1953 as follows:

13.1, 13.15, 13.152, 13.154.

14 CFR 33 through amendment 33-9 as follows:

33.4, Appendix A33.

14 CFR 33 through amendment 33-30 as follows:

33.7(b).

14 CFR 27 through amendment 27-0, except as noted below:

- 27.853 at amendment 27-37,
- 27.1351 at amendment 27-13,
- 27.1357 at amendment 27-13,
- 27.1529 at amendment 27-18,
- 27.561 is replaced with VAT.561,
- 27.785 is replaced with VAT.785.

14 CFR 27 through amendment 27-30 as follows:

27.952(a), 27.952(c), 27.952(f), 27.952(g).

14 CFR 27 through amendment 27-35 as follows:

27.975(b).

VAT.561 General:

(a) The rotorcraft, although it may be damaged in emergency landing conditions on land or water, must be designed as prescribed in this section to protect the occupants under those conditions.

(b) The structure must be designed to give each occupant every reasonable chance of escaping serious injury in a minor crash landing when--

(1) Proper use is made of seats, belts, and other safety design provisions;

(2) The wheels are retracted (where applicable); and

(3) The occupant experiences the following ultimate inertia forces relative to the surrounding structure:

(i) Upward—4.0g.

(ii) Forward--8.0g.

(iii) Sideward--8.0g.

(iv) Downward--12.0g.

(v) Rearward—4.0g.

(c) The supporting structure must be designed to restrain, under any ultimate inertial load up to those specified in this paragraph, any item of mass above and/or behind the crew and passenger compartment that could injure an occupant if it came loose in an emergency landing. Items of mass to be considered include, but are not limited to, rotors, transmissions, and engines. The items of mass must be restrained for the following ultimate inertial load factors:

- (1) Upward--1.5g.
- (2) Forward--4.0g.
- (3) Sideward--2.0g.
- (4) Downward--4.0g

VAT.785 Seats and berths:

- (a) The seats and berths, and their supporting structures, must be designed for loads resulting from the specified flight and landing conditions, including the emergency landing conditions of VAT.561.
- (b) The reactions from safety belts and harnesses must be considered.
- (c) Each pilot seat must be designed for the reactions resulting from the application of the pilot forces prescribed in Sec. 27.397.
- (d) The structural analysis and testing of the structures specified in paragraphs (a) through (c) may be simplified--
 - (1) By assuming that the critical load in each direction, as determined from the prescribed flight, ground, and emergency landing conditions, acts separately; or
 - (2) By using selected combinations of loads, if the required strength in the specified directions is proven.
- (e) Each occupant's seat must have a combined safety belt and shoulder harness with a single-point release. Each pilot's combined safety belt and shoulder harness must allow each pilot, when seated with safety belt and shoulder harness fastened, to perform all functions necessary for flight operations. There must be a means to secure belts and harnesses, when not in use, to prevent interference with the operation of the rotorcraft and with rapid egress in an emergency.

(f) Each occupant must be protected from serious head injury by a safety belt plus a shoulder harness that will prevent the head from contacting any injurious object.

(g) The safety belt and shoulder harness must meet the static strength requirements specified by this rotorcraft type certification basis.

VAT.963 Fuel tanks: general:

Each flexible fuel tank bladder or liner must be approved or shown to be suitable for the particular application and must be puncture-resistant. Puncture resistance must be shown by meeting TSO-C80 paragraph 16.0 requirements using a minimum puncture force of 250 pounds.

14 CFR 36 through amendment 36-30 as follows:

- Subpart H

Issued in Ft Worth, Texas on September 17, 2018.

Jorge Castillo

Acting Manager, Rotorcraft Standards Branch,

Policy and Innovation Division,

Aircraft Certification Service.

[FR Doc. 2018-20873 Filed: 9/25/2018 8:45 am; Publication Date: 9/26/2018]